CLAIMS

1. A key top made of transparent glass used for a key unit of a mobile phone and so forth characterized in that a character or symbol is formed by a set of fine cracks formed on the surface of a glass medium and/or the character or symbol is marked by a set of fine cracks formed at the upper position, intermediate position, lower position, or other desired position inside the glass medium.

2. The key top according to claim 1 characterized in that a laser light belonging to a near-infrared band having a wavelength of about 1100nm or below, visible light band, or ultraviolet light band is intermittently irradiated while focused on the desired position on the surface or inside of the key top, so that plenty of fine cracks are formed as a set in the glass medium to mark a character or symbol thereby.

3. A key top marking method for marking the surface or inside of the key top with a character or symbol by irradiating laser to the transparent glass key top characterized in that a laser light belonging to a near-infrared band having a wavelength of about 1100nm or below, visible light band, or ultraviolet light band is intermittently irradiated while focused on the desired position on the surface or inside of the key top so that plenty of fine cracks are formed as a set to represent a character or symbol.

4. The key top marking method according to claim 3 characterized in that either of the second through forth

higher harmonics of a solid-state laser doped with Nd (Neodymium) ion is applied as said laser light.

5. A method for manufacturing a key unit characterized in that

transparent glass key tops before marking are incorporated into a key unit;

the manufacturing work is temporarily discontinued in a state of completion of all the processes except for marking into said key unit;

pending the determination of the content of a character or symbol necessary for said key unit, a laser light belonging to a near-infrared band having a wavelength of about 1100nm or below, visible light band or ultraviolet light band is intermittently irradiated while focused on the desired position on the surface or inside of the key top, so that plenty of fine cracks are formed as a set on the surface or inside of the glass medium, and thereby

marking for representing the character or symbol is performed to complete the key unit.

6. The method for manufacturing a key unit according to claim 5 characterized in that either of the second through forth higher harmonics of a solid-state laser doped with Nd (Neodymium) ion is applied as said laser light.

Fig.1:

2: Data Input Means

Input of Data (Processed Data) such as Character and Symbol

3: Control Means

4: Laser Oscillation Means

Fig.2:

Configuration of 2-time Higher Harmonics Oscillation Solid-state Laser using Nonlinear Crystal (Output of a green color 0.53μm)

Nonlinear Crystal ($Ba_2NaNb_5O_{15}$)

Device which passes a wavelength of 0.53μm and reflects 1.06 μm

Output

Fig.10:

Process for Manufacturing Key Unit

S1: Injection/Compression Molding of Keypad

S2: Injection/Compression Molding of Key Top

S3: Printing/Painting

S4: Assembling

Decision of Shipment Destination

S5: Marking of Characters and Symbols

Shipment